# Aviation Investigation Final Report

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| **Location:** | MONTROSE, Pennsylvania | **Accident Number:** | BFO95LA019 |
| **Date & Time:** | December 9, 1994, 08:00 Local | **Registration:** | N36YE |
| **Aircraft:** | BEECH A36 | **Aircraft Damage:** | Substantial |
| **Defining Event:** | | **Injuries:** | 1 Minor |
| **Flight Conducted Under:** | Part 91: General aviation - Personal | | |

## Analysis

ABOUT 1 HOUR AFTER DEPARTURE, THE AIRPLANE'S ENGINE LOST TOTAL POWER. THE PILOT MADE A FORCED LANDING ON A ROAD. DURING THE ROLLOUT THE LEFT WING HIT A POLE AND TREE AND SEPARATED FROM THE FUSELAGE. THE AIRPLANE NOSED OVER AND SLID ABOUT 1/4 MILE, CROSSED OVER A DITCH, AND CAME TO REST. POSTACCIDENT EXAMINATION OF THE ACCIDENT SITE DID NOT REVEAL ANY FUEL SPILLAGE. EXAMINATION OF THE FUEL SYSTEM REVEALED NO ANOMALIES. ABOUT 1/2 CUP OF FUEL AND ABOUT 1/16 CUP OF WATER WAS FOUND IN THE RIGHT FUEL TANK. THE LEFT FUEL TANK WAS TORN APART DURING THE ACCIDENT SEQUENCE AND ITS FUEL QUANTITY WAS NOT DETERMINED. THE ENGINE WAS STARTED AND RAN WITH NO ANOMALIES NOTED. THE AIRPLANE WAS FLOWN 3.3 TACHOMETER HOURS SINCE IT WAS LAST REFUELED. DURING A POSTACCIDENT INTERVIEW WITH THE PILOT, HE STATED THAT PRIOR TO THE ENGINE QUITTING, 'EVERYTHING APPEARED TO BE NORMAL.' ACCORDING TO BEECH PERFORMANCE CHARTS, THE MAXIMUM FUEL BURN FOR THE AIRPLANE IS 15.2 GALLONS PER HOUR. THE AIRPLANE HAS A TOTAL FUEL CAPACITY OF 80 GALLONS, OF WHICH 6 ARE UNUSABLE.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: TOTAL LOSS OF ENGINE POWER FOR UNDETERMINED REASONS.

## Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: CRUISE

Findings
1. (C) REASON FOR OCCURRENCE UNDETERMINED
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Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY LANDING
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Occurrence #3: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: LANDING - ROLL

Findings
2. OBJECT - POLE
3. OBJECT - TREE(S)
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Occurrence #4: NOSE OVER
Phase of Operation: LANDING - ROLL

## Factual Information

On December 9, 1994, at 0800 eastern standard time, a Beech A36, N36YE, lost total engine power and a forced landing was made on a road in Montrose, Pennsylvania. The pilot received minor injuries. The airplane was substantially damaged. Instrument meteorological conditions prevailed. The 189 nautical mile instrument flight rules cross country flight departed Summit, Delaware, and was destined for Ithaca, New York. The flight was conducted under 14 CFR Part 91.

The pilot stated that he did a "...thorough preflight inspection..." prior to departure. He stated he visually checked the fuel levels to verify the amount of fuel he thought should be in the tanks. The pilot stated that he thought the airplane had a total of 35 gallons on board. He reported, "The last fuel purchase was at Charlotte, NC,...on Nov. 26, when the PIC for that flight had the aircraft fueled to the slot in the tabs, which indicates 60 gallons of useable fuel. The tach time was 541.0. When the aircraft landed at Summit Airport (N92) the tach time was 543.3. At 65% power the fuel consumed from Charlotte (CLT to N92) was 30.6 gallons (2.3 hours times 13.3 gph). Therefore, at least 29 gallons of useable fuel were in the plane."

The pilot stated that the departure from Summit was uneventful. He stated that during the flight, the "...fuel pressure read 13 gph." He stated that while in cruise flight at 4,000 feet mean sea level, he moved the fuel selector from the right fuel tank to the left fuel tank. The pilot stated that while the fuel selector was selected to the left tank, about one hour after departure, "...the engine sputtered." He stated he moved the fuel selector back to the right tank and the engine continued to sputter and then lost total power. He said he accomplished all emergency procedures but the engine did not restart. He said he moved the fuel selector back to the left tank and then prepared for an emergency landing. He stated he made an emergency landing on a road and during the roll out the airplane's left wing impacted a pole and a tree. The left wing was torn away from the fuselage and the airplane nosed over. He reported the airplane slid another 1/4 of a mile, crossed a ditch, and came to rest.

During a postaccident interview with the pilot, the pilot stated that he could not remember what the fuel quantity gauges were reading at the time of the accident. He stated that everything appeared to be "normal" just prior to the engine quitting. He recalled that after the engine stopped and a restart was attempted, the fuel flow gauges did not "spike" or measure any fuel flow.

Postaccident examination of the airplane revealed the airplane came to rest upside down in a field with its left wing crushed and torn away from the fuselage. The right wing was in tact. No evidence of fuel was found at the accident site. Due to the location and position of the airplane, the airplane was moved from the accident site and stored in a hangar for further examination.

The fuel system was tested and no anomalies were found. The right fuel tank was pressurized with air and about 1/2 of a cup of fuel and about 1/16 of a cup of water came out of the fuel line. The fuel line and fuel vent line were free from obstructions.

The left wing fuel tank was damaged and ruptured. A portion of the left wing fuel tank vent line was recovered and checked for obstructions. No obstructions were found.

The engine fuel lines were examined and about 1/8 of a cup of fuel was found throughout the engine's fuel lines. No fuel line leaks were found. Fuel was then provided to the engine through the fuel lines at the wing root and the engine was started. The engine ran with no anomalies noted. The fuel selector functioned with no anomalies noted.

According to Signature Air located in Charlotte, North Carolina, N36YE received 40 gallons of fuel on November 26, 1994. According to the pilot, the airplane was "topped off" at the time the airplane was fueled and the tachometer read 541.0 hours. After the accident the tachometer read 544.3 hours.

According to the Beech A36 flight manual, the airplane's total fuel capacity is 80 gallons, of which 6 gallons are unusable. The Performance Cruise Power Setting Chart in the A36 flight manual reports the maximum fuel burn at 75 percent Maximum Continuous Power (or Full Throttle) 2500 RPM, is 15.2 gallons per hour. (See attached Performance Charts).

## Pilot Information

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| **Certificate:** | Commercial; Flight instructor | **Age:** | 49,Male |
| **Airplane Rating(s):** | Single-engine land | **Seat Occupied:** | Left |
| **Other Aircraft Rating(s):** | None | **Restraint Used:** | |
| **Instrument Rating(s):** | Airplane | **Second Pilot Present:** | No |
| **Instructor Rating(s):** | Airplane single-engine | **Toxicology Performed:** | No |
| **Medical Certification:** | Class 2 Valid Medical--w/ waivers/lim | **Last FAA Medical Exam:** | March 9, 1993 |
| **Occupational Pilot:** | UNK | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | 1543 hours (Total, all aircraft), 1101 hours (Total, this make and model), 1483 hours (Pilot In Command, all aircraft), 47 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft) | | |

## Aircraft and Owner/Operator Information

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| **Aircraft Make:** | BEECH | **Registration:** | N36YE |
| **Model/Series:** | A36 A36 | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | | **Amateur Built:** | |
| **Airworthiness Certificate:** | Utility | **Serial Number:** | E-269 |
| **Landing Gear Type:** | Retractable - Tricycle | **Seats:** | 6 |
| **Date/Type of Last Inspection:** | July 26, 1994 Annual | **Certified Max Gross Wt.:** | 3600 lbs |
| **Time Since Last Inspection:** | 50 Hrs | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | 3697 Hrs | **Engine Manufacturer:** | CONTINENTAL |
| **ELT:** | Installed, activated, did not aid in locating accident | **Engine Model/Series:** | IO-520-BA8 |
| **Registered Owner:** | NPA INC. | **Rated Power:** | 285 Horsepower |
| **Operator:** | NPA INC. | **Operating Certificate(s) Held:** | None |
| **Operator Does Business As:** | | **Operator Designator Code:** | |

## Meteorological Information and Flight Plan

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| **Conditions at Accident Site:** | Instrument (IMC) | **Condition of Light:** | Day |
| **Observation Facility, Elevation:** | BGM ,1636 ft msl | **Distance from Accident Site:** | 15 Nautical Miles |
| **Observation Time:** | 07:50 Local | **Direction from Accident Site:** | 360° |
| **Lowest Cloud Condition:** | Scattered / 300 ft AGL | **Visibility** | 20 miles |
| **Lowest Ceiling:** | Broken / 25000 ft AGL | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | 11 knots / | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | 140° | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | 30 inches Hg | **Temperature/Dew Point:** | -7°C / -8°C |
| **Precipitation and Obscuration:** | | | |
| **Departure Point:** | MIDDLETOWN , DE (N92 ) | **Type of Flight Plan Filed:** | IFR |
| **Destination:** | ITHACA , NY (ITH ) | **Type of Clearance:** | IFR |
| **Departure Time:** | 07:20 Local | **Type of Airspace:** | Class E |

## Airport Information

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| **Airport:** | | **Runway Surface Type:** | |
| **Airport Elevation:** | | **Runway Surface Condition:** | |
| **Runway Used:** | 0 | **IFR Approach:** | |
| **Runway Length/Width:** | | **VFR Approach/Landing:** | Forced landing |

## Wreckage and Impact Information

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| **Crew Injuries:** | 1 Minor | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | | **Aircraft Fire:** | None |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | None |
| **Total Injuries:** | 1 Minor | **Latitude, Longitude:** | 41.830722,-75.869888(est) |

## Administrative Information

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| **Investigator In Charge (IIC):** | Napolitan, Margaret |
| **Additional Participating Persons:** | RAY KUBA; ALLENTOWN , PA |
| **Original Publish Date:** | April 5, 1995 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class |
| **Note:** | |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=9022 |